

REMARKS

Claims 1, 8, 10, 12, 21-23 and 25 are pending.

102 Rejections

Claims 1 and 8 versus Bhattacharyya

The instant Office Action states that Claims 1 and 8 are rejected under 35 U.S.C. § 102(e) as being anticipated by Bhattacharyya (U.S. Patent No. 6,784,480). The Applicants have reviewed the cited reference and respectfully submit that the present invention as recited in Claims 1 and 8 is not anticipated by Bhattacharyya.

Applicants respectfully submit that Bhattacharyya does not show or suggest the particular structure recited in independent Claim 1. According to the Federal Circuit, “[a]nticipation requires the disclosure in a single prior art reference of each claim under consideration” (W.L. Gore & Assocs. v. Garlock Inc., 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983)). However, it is not sufficient that the reference recite all the claimed elements. As stated by the Federal Circuit, the prior art reference must disclose each element of the claimed invention “arranged as in the claim” (emphasis added; Lindermann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984)).

Independent Claim 1 recites a polysilicon gate in a particular structure, while Bhattacharyya only recites a silicon gate. Although Bhattacharyya recites a polysilicon gate in conjunction with Figure 14, for example, Bhattacharyya does not show or suggest a polysilicon gate in the particular structure recited by Claim

1. For instance, the tunnel oxide layer in Bhattacharyya's Figure 14 does not include a dielectric material with a dielectric constant greater than that of silicon dioxide. Thus, Applicants respectfully submit that Bhattacharyya does not teach the elements of Claim 1 arranged as recited in Claim 1.

Therefore, Applicants respectfully submit that Bhattacharyya does not anticipate independent Claim 1, and that the rejection of Claim 1 under 35 U.S.C. § 102(e) is traversed. Applicants also submit that the rejection of Claim 8 under 35 U.S.C. § 102(e) is traversed, as Claim 8 is dependent on Claim 1 and recites additional limitations.

Claims 10 and 12 versus Weimer

The instant Office Action states that Claims 10 and 12 are rejected under 35 U.S.C. § 102(e) as being anticipated by Weimer (U.S. Patent No. 6,559,007). The Applicants have reviewed the cited reference and respectfully submit that the present invention as recited in Claims 10 and 12 is not anticipated by Weimer.

Applicants respectfully submit that Weimer does not show or suggest the particular structure recited in independent Claim 10. In essence, Claim 10 recites a "higher-K dielectric" sandwiched between a substrate and a layer of silicon material (where "higher-K dielectric" refers to a dielectric material with a dielectric constant greater than that of silicon dioxide). However, Weimer's layer 40 is a "nitrided" version of Weimer's layer 30 (that is, layer 40 consists of layer 30 plus nitrogen). Weimer only teaches layer 30 as consisting of either silicon dioxide or tantalum pentoxide. If layer 30 consists of the higher-K material

tantalum pentoxide, then layer 40 would not include a silicon material, in contrast to the present claimed invention. On the other hand, Weimer's layer 40 would include silicon dioxide only if layer 30 consists of silicon dioxide; in that case, layer 30 would therefore not include a material with a dielectric constant greater than that of silicon dioxide, in contrast to the present claimed invention.

According to the Federal Circuit, “[a]nticipation requires the disclosure in a single prior art reference of each claim under consideration” (W.L. Gore & Assocs. v. Garlock Inc., 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983)). However, it is not sufficient that the reference recite all the claimed elements. As stated by the Federal Circuit, the prior art reference must disclose each element of the claimed invention “arranged as in the claim” (emphasis added; Lindermann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984)).

Therefore, Applicants respectfully submit that Weimer does not anticipate the limitations of independent Claim 10, and that the rejection of Claim 10 under 35 U.S.C. § 102(e) is traversed. Applicants also submit that the rejection of Claim 12 under 35 U.S.C. § 102(e) is traversed, as Claim 12 is dependent on Claim 10 and recites additional limitations.

103 Rejections

The instant Office Action states that Claims 21-23 and 25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bhattacharyya in view of Weimer, or alternatively over Weimer in view of Bhattacharyya. The Applicants have reviewed the cited references and respectfully submit that the present

invention as recited in Claims 21-23 and 25 is not anticipated by Bhattacharyya and Weimer, alone or in combination.

As presented above, Applicants respectfully submit that Bhattacharyya does not show or suggest a polysilicon floating gate adjoining a higher-K dielectric as recited in independent Claim 21. Applicants also submit that Weimer does not overcome this shortcoming of Bhattacharyya. Weimer describes a polysilicon gate 50, but it does not adjoin Weimer's dielectric layer 30.

As presented above, Applicants respectfully submit that Weimer does not show or suggest a second layer comprising a silicon material and adjoining a higher-K dielectric layer (where the second layer is between a polysilicon floating gate and the dielectric layer). Applicants also submit that Bhattacharyya does not overcome this shortcoming of Weimer. Bhattacharyya may describe a first layer 122 between a substrate 102 and a dielectric layer 124, but Bhattacharyya does not show or suggest the second layer recited in independent Claim 21.

Therefore, Applicants respectfully submit that Bhattacharyya and Weimer, alone or in any combination, do not anticipate the limitations of independent Claim 21, and that the rejection of Claim 21 under 35 U.S.C. § 103(a) is traversed. Applicants also submit that the rejection of Claims 22-23 and 25 under 35 U.S.C. § 103(a) is traversed, as Claims 22-23 and 25 are dependent on Claim 21 and recite additional limitations.

Conclusions

In light of the above remarks, Applicants respectfully request reconsideration of the rejected claims.

Based on the arguments presented above, Applicants respectfully assert that Claims 1, 8, 10, 12, 21-23 and 25 overcome the rejections of record and, therefore, Applicants respectfully solicit allowance of these claims.

The Examiner is invited to contact Applicants' undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Date: 6/5/06

Respectfully submitted,
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